TABLE 2.—*Crest stages of important floods in Sacramento Basin.*

Station	March 1907	January–February 1909	February 1915	March 1928	April 1935	February 1936	December 1937	February–March 1940	March–April 1940	February–March 1941	April 1941	January 1942	February 1942	January 1943	Highest of Record (to 1943, inclusive)
Kennett	33.2	32.5	29.5	23.0	14.0	21.8	29.0	36.3	23.1	17.4	19.7	18.3	20.9		36.3, Feb. 28, 1940.
Vollmers							19.5	27.3							
Red Bluff	26.8	30.5	30.4	26.9	23.6	25.4	32.0	32.2	28.0	25.6	26.2	23.8	28.6	26.8	32.2, Feb. 28, 1940.
Tehama	220.0		222.6							219.1	219.4		221.4	218.6	
Hamilton City				22.0	18.8	20.4	22.8	22.6	20.8	20.6	20.1	18.6	21.8	19.1	22.8, Dec. 11, 1937.
St. John	13.2	12.6	11.5	7.6	4.5	6.2	12.0	13.9	5.4	12.4	10.3	7.8	9.5	9.3	13.9, Feb. 28, 1940.
Ord Ferry						115.4	121.0	121.6	119.1	119.0	118.8	117.1	121.2	118.1	
Colusa	29.3	28.0	28.8	25.7	25.6	26.0	26.8	29.5	26.2	27.1	26.7	25.9	28.6	26.0	29.5, Mar. 1, 1940
Knights Ldg	32.2	31.1	30.9	31.2	30.2	31.0	32.6	34.0	31.7	32.2	30.9	31.5	34.0	31.8	34.0, Mar. 1, 1940.
Las Plumas	493.0	489.0		481.6		471.7	481.0	479.4	478.0	472.6		471.2	474.4	472.2	
Oroville	28.2	26.0	12.8	26.1	14.3	17.7	26.3	25.1	24.1	18.0	11.6	15.5	20.0	18.7	28.2, Mar. 19, 1907.
Colgate	23.0	19.5	7.2	21.0	11.0	13.0	22.0	14.8	15.3	12.8	4.7	12.2	12.5	17.7	23.0, Mar. 18, 1907.
Marysville	73.8	74.4	65.9	74.5	66.5	69.0	76.2	75.5	76.0	67.4	61.7	66.8	70.0	68.2	76.2, Dec. 11, 1937.
Nicolaus			18.9	23.2	20.5	21.2	24.6	26.3	25.6	22.9	19.4	21.9	25.1	22.0	26.3, Feb. 29, 1940.
Wolf				[1] 13.8			[1] 10.3					8.2	9.0	[1] 14.0	
Rattlesnake Bridge					17.6	16.6	[1] 25.9		21.5		8.5	18.8	12.7	26.5	
Coloma					16.8	16.5	20.5		18.1		17.5	20.7	13.0	22.4	
Folsom	26.8	24.5	12.4	26.8	18.8	18.4	23.9	19.1	21.9	14.5	11.9	20.3	14.7	26.0	26.8, Mar. 19, 1907 and Mar. 25, 1928.
H St. Bridge				43.4	39.0	29.0	41.9	39.2	41.6	34.5		40.0	36.4	42.5	43.4, Mar. 25, 1928.
Sacramento	26.9	29.6	25.4	29.5	28.6	28.7	27.7	28.5	28.5	27.3	25.8	28.3	27.6	28.8	29.6, Jan. 17, 1909.
Michigan Bar	16.3	10.5	7.5	11.0	10.4	9.9	7.6	8.3	11.7			11.2			16.3, March 1907.
Bensons Ferry	14.5		11.0	13.8	11.4	14.3	4.9	13.3	15.5	9.5	10.5	14.7	12.1	14.3	15.5, April 1, 1940.
La Grange				9.3	5.3	4.5		5.4	8.5						9.9, Jan. 18, 1921.
Lathrop	19.2	18.7	12.9	16.4	12.8	15.3	5.2	14.4	16.6	15.4	11.8	7.1	10.1		22.5, Feb. 1, 1911.[2]

[1] Approximately.

[2] 20.7, Mar. 17, 1938.

liminary reports indicate the crest may have exceeded that of 1928. At Wheatland on the Bear River a crest of 18.0 feet was reported to be 3 feet higher than any previous record. Elsewhere crests were not unusually high, in most cases ranking approximately as the seventh highest of the past 40 years. Unquestionably, however, it can be called the greatest flash flood of record during this century in the Sacramento Valley. On no other occasion has a flood of this magnitude developed from low water to crest in a period as short as 24 hours.

Damage was relatively light throughout the district. An important factor in conserving losses was the general warnings given to stockmen, permitting the removal of livestock from the bypasses and lowland areas, which, on account of antecedent low water were being more extensively pastured than usual in midwinter.

Overflow occurred as follows:

East side Sacramento River from Red Bluff to below Hamilton City.—Overflow normally occurs here nearly every year. The land is used primarily for grazing and little damage is reported.

Reclamation District 1001 on the Lower Bear River.—A levee break inundated a portion of this district requiring the evacuation of about 100 families. Damage was primarily restricted to dwellings and farm equipment. Red Cross workers from Yuba City and soldiers from Camp Beale rendered splendid service in evacuation of the flooded area.

American River from the vicinity of Sierra Oaks to the mouth.—The lowlands outside the Sacramento and Northern Sacramento levees were flooded. The damage was principally to dwellings and farm buildings. Damage was increased by the failure of a minor levee above H Street Bridge. The break did not increase the flooded area over what is normally covered at the stages which occurred but the suddenness of the break caused flooding before residents had ample opportunity to complete preparations. About 30 families were affected in this area.

Liberty Island, Prospect Island, and Little Holland Tracts in Yolo Bypass.—These farm tracts in Yolo Bypass are protected by substandard levees and flooding is expected whenever moderately high overflow occurs at Fremont Weir. The owners had ample warning and little damage was reported, except to levees and prospective crops.

FLOOD LOSS STATISTICS

1. Damage to tangible property, including buildings, equipment, land, roads, levees, etc	$225, 700
2. Damage to crops, actual and prospective, involving 18,650 acres	141, 200
3. Value of livestock lost	500
4. Loss of income and suspension of business, including wages of employees	9, 500
Total loss	376, 900
5. Money value of property saved by flood warnings (incomplete estimate)	31, 000

6. No loss of life was reported, but it is believed that some lives were saved as result of warnings issued.

Frequent and damaging floods occurred in the Willamette River and tributaries from November 23, 1942, to January 8, 1943. The Weather Bureau office, Portland, Oreg., submits the following report relative to the floods:

The rainy season began on October 30th when the first of a series of storms moved across Oregon. The storms became more intense by November 21, when a series of occlusions moved across the Pacific Northwest at intervals of about 24 to 36 hours, with frontal systems moving across on November 21, 22, 23, 24, 26, 28, 30, and December 1. The systems of November 28 and December 1 moved relatively slowly and were attended by widespread, warm-frontal rains over the Northwest. High pressure moved inland during December 2 and 3, but by the evening of the 4th pressures again began to fall over the Northwest, with the first of a family of systems moving across the Pacific Northwest on the 5th.

Successive systems moved inland over the Northwest on the 6th, 7th, 8th, and 9th and were again followed by high pressure, which spread over the western third of the country by the 10th. A weak trough passed over the Northwest on the 12th with rains limited to the region of the Cascades westward. High pressure dominated the western half of the map from the 13th to the 19th, causing the storm track to shift toward the north. On the evening of the 19th the first of a series of lows, with centers moving just north of Vancouver Island and occluding frontal systems extending southward to California, were noted.

Systems followed with a period of approximately 36 to 48 hours on the 20th, 21st, 23d, 24th, 26th, and 29th. The trough of the 29th moved slowly and was followed by secondary storms forming as waves on the discontinuity just off the Oregon coast on the 30th and again on the 31st. The last two systems formed directly off the Oregon coast and their attendant precipitation areas were widespread, warm, and heavy in amounts, especially from the Cascades westward.

High pressure accompanied by low temperatures moved inland on the 1st and 2d of January and stagnated over the Great Basin, bringing to an end an exceedingly stormy two months over Oregon.

August, September, and most of October were dry, and some new low-water records were established. Because of this the heavy rains which began on October 31 and continued at frequent intervals until January 2, required considerable time to bring any of the streams to flood stage.

November and December were unusually wet. For Oregon as a whole November was the second wettest of record and December the wettest of record, more than 47 percent of the year's precipitation having occurred in the 2 months. In this 2-month period the precipitation in the Willamette drainage basin was 187 percent of the normal. Including January 1, 1943, the average precipitation for stations in this basin was 32.59 inches. Precipitation at selected stations is given in table 3.

As previously indicated, the floods were not the result of a single outstanding storm, but of a prolonged wet period. At times melting snow in the foothills was a contributing factor, but at no time was there large run-off from high snow. Mountain snow storage at the

close of the flood period was unusually great for so early in the season.

In November the average river stages were the highest for several years at all stations in the basin, and the highest of record for November at several stations having relatively short records. In December the average was the highest of record for any month at Albany, Eula, Harrisburg, Jefferson, Leaburg, Salem, and Waterloo, and unusually high at other stations. Table 4 shows the crests reached at important stations, compared with the most recent equal or higher crests.

It is reported that 10 lives were lost. There was some loss of livestock and damage to roads, bridges, buildings, crops, and pastures. Erosion of farm and pasture land was serious locally. Considerable loss resulted from interrupted transportation, industry, and business.

TABLE 3.—*Precipitation at selected stations in Willamette River Basin, Nov. 1942 to Jan. 1, 1943, and departures from normal*

Station	River	November	Departure from normal	December	Departure from normal	Jan. 1	Total
Black Butte	Coast Fork	14.84	+ 6.11	18.40	+10.73	1.98	35.22
Saginaw	do	13.53	+ 7.66	16.30	+ 9.20	1.90	31.73
Rujada	Row	15.05	+ 8.95	15.04	+ 7.28	2.15	32.24
Star	do	12.64		15.33		1.84	29.81
Cascade Summit	Middle Fork (Nr.)	17.62	+11.38	15.69	+ 6.65	1.30	34.61
Eula	Middle Fork	16.42	+ 9.81	15.39	+ 8.55	2.35	34.16
Oakridge	do	12.56	+ 6.72	14.41	+ 9.59	.93	27.90
Westfir	do	14.54		14.58		1.90	31.02
Wicopee	do	18.33	+11.62				
Leaburg	McKenzie	16.55		17.69		1.55	35.79
McKenzie Bridge	do	22.91	+10.70	23.94	+13.70		
Monroe	Long Tom	15.25		13.97		1.24	30.46
Corvallis Water Bur.	Marys	21.80		19.16		1.23	42.19
Philomath (nr.)	do	14.16		10.59		1.36	26.11
Summit	do	20.76	+10.57	14.92	+ 4.51	1.98	37.66
Holley	Calapooya	15.56		14.24		1.46	31.26
Cascadia	Santiam	18.91	+11.60	14.89	+ 6.09	2.09	35.89
Detroit	do	27.76	+16.04	19.76	+ 9.82	2.80	50.32
Jefferson	do	14.14	+ 7.86	10.49	+ 3.72	1.55	26.18
Mehama	do	21.83	+12.93	15.50	+ 5.30	1.78	39.11
Waterloo	do	13.82	+ 7.69	11.36	+ 4.30	1.41	26.59
Falls City	Luckiamute	22.67	+10.26	18.96	+ 6.88	1.17	42.80
Suver	do	13.31		9.90			
Molalla	Molalla	15.47		10.36			
Sundown Ranch	do	21.56	+12.00	16.50	+ 2.83	.93	38.99
McMinnville	Yamhill	15.94	+ 8.54	12.25	+ 5.41	.66	28.85
Whiteson	do	17.24		10.84		.81	28.89
Willamina	do	16.61	+ 8.53	13.32	+ 3.31	1.16	31.09
Forest Grove	Tualatin	14.18	+ 6.44	11.17	+ 3.53		
Spring Glade Acres	do	17.92		13.99		1.03	32.94
Cazadero	Clackamas	18.90	+11.60	13.21	+ 6.09		
Three Links	do	21.53	+11.59	16.40	+ 7.24	2.72	40.65
Albany	Willamette	13.72	+ 7.00	9.99	+ 3.93	1.65	25.36
Corvallis	do	12.69	+ 5.77	10.37	+ 3.74	.50	23.56
Eugene	do	12.32	+ 6.43	12.34	+ 6.68	1.66	26.32
Harrisburg	do	16.71	+ 7.86	12.55	+ 5.44	1.20	30.46
Portland	do	14.40	+ 8.30	11.07	+ 4.35	.73	26.20
Salem	do	13.38	+ 7.49	11.70	+ 5.86	.17	25.25
Silver Creek Falls	do	21.91		16.88		.98	39.77
West Linn	do	18.61		11.00		1.00	30.61

TABLE 4.—*Crest stages of floods in Willamette Basin and comparison with previous floods*

Station and drainage	1942–43 crest		Most recent equal or higher crest	
	Stage	Date	Stage	Date
Willamette:				
Albany	30.6	Jan. 2	31.0	Nov. 24, 1909
Corvallis	[1] 28.1	do		
Eugene	16.7	Jan. 1	17.0	Feb. 21, 1927
Harrisburg	[2] 17.1	do		
Oregon City	18.3	Jan. 3	19.6	Jan. 9, 1923
Portland	20.2	do	23.6	Dec. 24, 1933
Salem	30.6	Jan. 2	31.0	Jan. 8, 1923
Coast Fork of Willamette:				
Saginaw	11.9	Dec. 30–31	12.6	Jan. 2, 1933
Middle Fork of Willamette:				
Eula	17.0	Dec. 31	17.0	Feb. 21, 1927
McKenzie:				
Leaburg	[3] 22.8	Jan. 1		
Long Tom:				
Monroe	[3] 17.0	do		
Santiam:				
Jefferson	21.3	do	[4] 17.5	Apr. 1, 1931

[1] Short record.
[2] Highest of (short) record.
[3] Fragmentary record.
[4] Based on former gage; equal to approximately 21 feet on present gage.

FLOOD-STAGE REPORT FOR JANUARY 1943

[All dates in January unless otherwise specified]

River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
ATLANTIC SLOPE DRAINAGE					
Roanoke:	*Feet*			*Feet*	
Weldon, N. C	31	Dec. 31	3	37.0	1
Williamston, N. C	10	4	11	11.1	8
Tar:					
Rocky Mount, N. C	9	20	21	9.1	21
Greenville, N. C	13	22	25	14.1	24
Neuse:					
Neuse, N. C	14	Dec. 31	2	15.2	2
		19	22	16.8	20
		30	31		
Smithfield, N. C	13	1	4	14.5	3
		19	24	18.2	21
		29	(1)		
Goldsboro, N. C	14	22	29	17.4	26
Kinston, N. C	14	26	(1)	16.0	29–30
Haw: Moncure, N. C	20	19	19	20.0	19
Cape Fear:					
Fayetteville, N. C	35	20	21	36.9	20–21
Lock No. 2, Elizabethtown, N. C	22	1	1	22.3	1
		20	24	28.6	22
		30	(1)		
Pee Dee:					
Cheraw, S. C	30	19	21	33.85	20
		29	31	34.7	29–30
Mars Bluff, S. C	17	21	(1)	19.6	24–25
Poston, S. C	18	26	(1)	19.2	29
Saluda:					
Pelzer, S. C	6	18	21	8.5	19
		27	31	11.0	28
Chappells, S. C	13	19	20	17.5	19
		28	30	22.2	29
		19	21	20.2	20
Broad: Blairs, S. C	14	28	30	22.0	30
Congaree: Columbia, S. C	19	19	20	19.4	20
Catawba:					
Catawba, N. C	8	29	29	9.2	29
Catawba, S. C	11	19	19	11.9	19
		29	30	15.2	29
Wateree: Camden, S. C	23	20	21	24.8	20
Santee: Rimini, S. C				16.2	27
Broad: Carlton, Ga	15	18	19	19.6	18
		28	28	15.3	28
Savannah:					
Augusta, Ga	32	19	21	33.3	20
Butler Creek, Ga	21	Dec. 30	1	23.5	Dec. 31 – Jan. 1
		19	22	24.8	20
		29	31	23.3	30
Ogeechee: Dover, Ga	7	23	(1)	8.8	25
Ocmulgee:					
Macon, Ga	18	19	21	22.0	20
Hawkinsville, Ga	25	22	25	27.0	23
Abbeville, Ga	11	21	(1)	16.1	25
Oconee:					
Milledgeville, Ga	20	Dec. 29	1	22.5	Dec. 30
		19	23	28.4	20
		28	30	23.9	29
Dublin, Ga	21	22	27	25.0	24
Mt. Vernon, Ga	16	23	30	19.1	26
Altamaha:					
Charlotte, Ga	12	9	12	12.9	11
		23	(1)	21.5	29
Everett City, Ga	10	30	(1)		
EAST GULF OF MEXICO DRAINAGE					
Chattahoochee:					
Columbia, Ala	42	20	22	46.3	20
Eufaula, Ala	40	19	21	48.0	20
Flint:					
Albany, Ga	20	21	26	32.0	22
Bainbridge, Ga	25	23	28	29.1	25
Apalachicola:					
River Junction, Fla	20	22	25	22.0	23
Blountstown, Fla	15	1	6	17.1	3
		20	(1)	21.9	24
Conecuh: River Falls, Ala	35	19	19	35.3	19
		22	22	36.5	22
Choctawhatchee:					
Newton, Ala	19	20	21	27.4	20
Geneva, Ala	23	22	23	24.4	23
Caryville, Fla	12	23	26	13.4	24
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Illinois:					
Morris, Ill	13	Dec. 28	1	18.0	Dec. 28
Peru, Ill	17	Dec. 28	6	21.1	Dec. 29
Peoria, Ill	18	1	7	19.0	3
Havana, Ill	14	Dec. 31	17	16.7	5–6
Beardstown, Ill	14	Dec. 29	20	18.2	6
Mississippi:					
Louisiana, Mo	12	6	14	12.3	8–9
Grafton, Ill	18	Dec. 30	1	18.9	Dec. 31
Chester, Ill	27	Dec. 30	4	29.6	2
Cape Girardeau, Mo	32	Dec. 31	4	34.4	2

See footnotes at end of table.